

Application No. 10/627,316  
Response to OA of 03/10/2006

### Remarks

In the present response, four claims (1, 26, 28 and 29) are amended; and two claims (31 and 32) are newly added. Claims 1-19, 27-29, and 31-32 are presented for examination. No new matter is entered.

### I. Drawing Objections

The drawings are objected to as not complying with 37 CFR 1.83(a). Specifically, the Office Action alleges that the "transparent portion" in claims 7 and 15 is not shown in the drawings. Applicants respectfully traverse.

Support for the "transparent portion" in claims 7 and 15 is found at least in paragraphs [0023], [0025], and [0026]. For at least these reasons, Applicants request withdrawal of these rejections.

### II. Claim Objections

Claims 28 and 29 are objected to because of informalities. These claims are amended as suggested by the Examiner.

### III. Claim Rejections: 35 USC § 102(b)

Claims 1-18, and 27-28 are rejected under 35 USC § 102(b) as being anticipated by USPN 6,417,817 (Pirila). Applicants respectfully traverse this rejection.

A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior art reference disclose each element of the claim. See MPEP § 2131, also, *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983). Since Pirila neither teaches nor suggests each element in the claims, these claims are allowable over Pirila.

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**Claim 1**

Independent claim 1 recites numerous recitations that are not taught or suggested in Pirila. Some examples are provided below.

**Example 1**

As one example, claim 1 recites a radio module that includes a radio transceiver, an antenna, and an electromagnetic shield. The **electromagnetic shield** is disposed **around** the antenna. The Office Action cites FIGS. 1 and 2 of Pirila for allegedly teaching these recitations. Applicants respectfully disagree.

FIGS. 1 and 2 of Pirila teach a structure having an antenna (“well-known PIFA of Planar Inverted-F-antenna”) and a cover 107. Nowhere does Pirila teach that this cover 107 is an “electromagnetic shield.” Instead, Pirila states that this cover “protects the whole arrangement and gives it a desired outer appearance” (1: 36-37 and 40-41). Pirila appears to teach a conductive frame 105 that surrounds radio frequency components 104 (1: 29-33). This conductive frame, however, is not “around” the antenna.

For at least these reasons, independent claim 1 and its dependent claims are allowable over Pirila.

**Example 2**

As another example, claim 1 recites that the electromagnetic shield is disposed around the antenna “to isolate the antenna from loading effects of components of the electrical device **that are external to the radio module**” (emphasis added). The Office Action cites FIG. 2 of Pirila at column 1, line 36 for allegedly teaching these recitations. Applicants respectfully disagree.

First, Pirila states that cover 107 “protects the whole arrangement and gives it a desired outer appearance” (1: 36-37). Nowhere does Pirila teach that this cover 107 is an “electromagnetic shield” that isolates the antenna from loading effects of components “that are external to the radio module.” Instead, Pirila states that this cover “protects the whole arrangement and gives it a desired outer appearance” (1: 36-37 and 40-41). Pirila appears to teach a conductive frame 105 that surrounds radio frequency components 104 (1: 29-33). This conductive frame is not “around” the antenna. As such, this conductive

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frame does not “isolate the antenna from loading effects of components of the electrical device that are external to the radio module.”

For at least these reasons, independent claim 1 and its dependent claims are allowable over Pirila.

### Claim 12

Independent claim 12 recites numerous recitations that are not taught or suggested in Pirila. Some examples are provided below.

#### Example 1

As one example, claim 12 recites a radio module that includes a printed circuit board, an antenna, and an electromagnetic shield. The antenna is “disposed on the printed circuit board.” The Office Action cites FIGS. 1 and 2 of Pirila for allegedly teaching these recitations. Applicants respectfully disagree.

The Office Action argues that Pirila shows an antenna 111 disposed on a circuit board of FIG. 2. The antenna 111, however, is not “disposed on” the printed circuit board 101. By contrast, the antenna 111 is disposed above the printed circuit board 101. The antenna in Pirila may be electrically coupled to the printed circuit board (see FIG. 2), but the antenna is not disposed on the circuit board.

In order for a prior art reference to be anticipatory under 35 U.S.C. § 102 with respect to a claim, “[t]he elements must be arranged as required by the claim,” see M.P.E.P. § 2131, citing *In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990).

For at least these reasons, independent claim 12 and its dependent claims are allowable over Pirila.

#### Example 2

As another example, claim 12 recites an electromagnetic shield that extends “around the antenna.” The Office Action cites FIGS. 1 and 2 of Pirila for allegedly teaching these recitations. Applicants respectfully disagree.

FIGS. 1 and 2 of Pirila teach an electromechanical structure having an antenna (“well-known PFIA of Planar Inverted-F-antenna”) and a cover 107 that “protects the

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whole arrangement and gives it a desired outer appearance" (1: 36-37 and 40-41). Nowhere does Pirila teach that this cover 107 is an "electromagnetic shield." Instead, Pirila states that this cover protects the whole arrangement and provides an outer appearance. Pirila does teach a conductive frame 105 that surrounds radio frequency components 104 (1: 29-33). This conductive frame, however, is not "around" the antenna.

For at least these reasons, independent claim 12 and its dependent claims are allowable over Pirila.

### Example 3

As another example, claim 12 recites that the electromagnetic shield is disposed around the antenna "to isolate the antenna from loading effects of components of the electrical device **that are external to the radio module**" (emphasis added). The Office Action cites FIGS. 1 and 2 of Pirila for allegedly teaching these recitations. Applicants respectfully disagree.

First, Pirila teaches that cover 107 "protects the whole arrangement and gives it a desired outer appearance" (1: 36-37). Nowhere does Pirila teach that this cover 107 is an "electromagnetic shield" that isolates the antenna from loading effects of components "that are external to the radio module." Instead, Pirila states that this cover protects the whole arrangement and provides an outer appearance. Pirila does teach a conductive frame 105 that surrounds radio frequency components 104 (1: 29-33). This conductive frame is not "around" the antenna. As such, this conductive frame does not "isolate the antenna from loading effects of components of the electrical device that are external to the radio module."

For at least these reasons, independent claim 12 and its dependent claims are allowable over Pirila.

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**Claim 27**

Independent claim 27 recites numerous recitations that are not taught or suggested in Pirila. Some examples are provided below.

**Example 1**

As one example, claim 27 recites a shield around an antenna. This shield isolates “the antenna from electrical noise generated by electrical components within the electrical device but external to the radio module.” The Office Action cites Pirila at column 2, line 9. Applicants respectfully disagree.

FIG. 3 of Pirila teaches radio frequency components 301 disposed on a printed circuit board 302 (3: 46-47). As shown in FIG. 3 of Pirila, the antenna 305 is positioned above the shield 303 on a surface of planar conductive element 304. Thus, the shield 303 does not isolate the antenna 305 from electrical noise generated by electrical components “within the electrical device but external to the radio module.” In Pirila, the antenna 305, shield 303, and RF components 301 appear to form the radio module.

For at least these reasons, independent claim 27 and its dependent claims are allowable over Pirila.

**Example 2**

As another example, claim 27 recites a shield that extends “around the antenna.” This shield isolates the antenna from electrical noise. Pirila does not teach or suggest these recitations. As shown in FIG. 3 of Pirila, the antenna 305 is positioned above the shield 303 on a surface of planar conductive element 304. Thus, the shield 303 is not “around” the antenna 305. Further, the shield 303 does not “isolate the antenna from electrical noise.” In Pirila, the shield 303 isolates the RF components 301 from electrical noise (4: 1-11).

For at least these reasons, independent claim 27 and its dependent claims are allowable over Pirila.

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**IV. Claim Rejections: 35 USC § 103**

Claims 19 and 29 are rejected under 35 USC § 103 as being unpatentable over Pirila. This rejection is traversed.

Dependent claim 19 depends from independent claim 12, and dependent claim 29 depends from independent claim 27. For at least the reasons given above in section III with respect to the respective independent claims, dependent claims 19 and 29 are allowable over Pirila.

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### CONCLUSION

In view of the above, Applicants believe that all pending claims are in condition for allowance. Allowance of these claims is respectfully requested.

Any inquiry regarding this Amendment and Response should be directed to Philip S. Lyren at Telephone No. (832) 236-5529. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,



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### CERTIFICATE UNDER 37 C.F.R. 1.8

The undersigned hereby certifies that this paper or papers, as described herein, is being transmitted to the United States Patent and Trademark Office facsimile number 571-273-8300 on this 12<sup>th</sup> day of June, 2006.

By

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